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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/927,315	08/10/2001	Charles S. Zuker	23540-10616/US	4699

758 7590 11/13/2006

FENWICK & WEST LLP
SILICON VALLEY CENTER
801 CALIFORNIA STREET
MOUNTAIN VIEW, CA 94041

EXAMINER

BRANNOCK, MICHAEL T

ART UNIT PAPER NUMBER

1649

DATE MAILED: 11/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/927,315

Applicant(s)

ZUKER ET AL.

Examiner

Michael Brannock

Art Unit

1649

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 49-51, 56-58, 67, 69-72, 75 and 76 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 49-51, 56-58, 67, 69-72, 75 and 76 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>071206, 100406</u> | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Status of Application: Claims and Amendments

Applicant is notified that the amendments put forth on 8/14/2006, have been entered in full. Claims 49-51, 56-58, 67, 69-72, 75, 76 are pending. Applicant's new election of the species of heteromeric receptor comprising SEQ ID NO: 8 and 20 is acknowledged, see MPEP 803.02

Response to Amendment

Applicant is notified that any outstanding objection or rejection that is not expressly maintained in this Office action has been withdrawn in view of Applicant's amendments.

New Rejections:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 49, 50, 51, 56, 57, 58, 67, 69-72, 75 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Publication 20030232407 published December 18, 2003 to Zoller et al.

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Zoller claim assay methods (claims 44-94 of Zoller) for modulators of a sweet taste receptor comprising a heterodimers of T1R2 and T1R3, such receptors being of mouse, rat, and human origin. The rT1R2 disclosed by Zoller is 100%% identical to the instant SEQ ID NO: 7, the rT1R3 disclosed by Zoller is 100% identical to the instant SEQ ID NO: 25. The rT1R3 is 92% and 93% identical to the instant murine SEQ ID NO: 20 and 23, respectively. The methods claimed by Zoller include contacting a compound with a cell expressing the T1R2/T1R3 heterodimer and determining the effect that the compound has on the activity of the T1R2/T1R3 heterodimer (claim 48) or measuring ligand binding (claim 47). Wherein the cell is human (claim 51), and the effect is chemical or phenotypic, e.g. claims 52-57. Furthermore, as claimed by Zoller, for example, in claim 51, the use of cells such as CHO, HeLa and HEK-293 in the methods would necessarily involve the recombinant expression of the T1R2/T1R3 heterodimer, as required by the instant claims. Although claims 44-94 of ADLER are not worded exactly the same as the instant claims, they perform the same method steps, with the same materials and accomplish the same goals and are thus not patentably distinct.

Additionally, the instant claims 50 and 51 make the distinction between non-covalent and covalently linked heterodimers. The instant specification does not indicate what the default state of the heterodimers would be when expressed in a cell, only that they could be either non-covalently or covalently linked, see page 11. Thus it is assumed that it is an inherent property of the expressed heterodimers that they would be either non-covalently or covalently linked, i.e. a mixture of both states, and thus the claims of the Zoller publication read on both claim 50 and 51.

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Applicant is reminded that the Zoller reference is a U.S. patent or U.S. patent application publication of a pending or patented application that claims the rejected invention. An affidavit or declaration is inappropriate under 37 CFR 1.131(a) when the reference is claiming the same patentable invention, see MPEP § 2306. If the reference and this application are not commonly owned, the reference can only be overcome by establishing priority of invention through interference proceedings. See MPEP Chapter 2300 for information on initiating interference proceedings. If the reference and this application are commonly owned, the reference may be disqualified as prior art by an affidavit or declaration under 37 CFR 1.130. See MPEP § 718.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 49, 50, 51, 56, 57, 58, 67, 69-72, 75 and 76 rejected under 35 U.S.C.

103(a) as being obvious over 20030232407 to Zoller et al. as set forth above regarding claims 49, 50, 51, 56, 57, 58, 67, 69-72, 75 and in view of U.S. Patent No: 6383778 .

The applied reference, 6383778, has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is

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thus not an invention “by another”; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Claims 49, 50, 51, 56, 57, 58, 67, 69-72, 75 are anticipated by claims 44-94 of Zoller, as set forth above, yet claims 49, 50, 51, 56, 57, 58, 67, 69-72, 75 encompass embodiments that utilize the murine T1R2 as defined by SEQ ID NO: 8.

Zoller does not describe a murine T1R2 having the sequence of SEQ ID NO: 8. U.S. Patent No: 6383778 discloses the murine T1R2 having the sequence of SEQ ID NO: 8 (mouse GPCR4). Therefore, one of ordinary skill in the art, at the time the invention was made, and with reasonable expectation of success, would be motivated to use the murine T1R2 disclosed by U.S. Patent No: 6383778 when practicing the methods of Zoller. The motivation to do so was provided by Zoller, e.g. claim 27, who teach that variants of the murine T1R2 are encompassed by the claimed invention

Alignment of SEQ ID NO: 20 and Zoller rT1R3

```
; SEQ ID NO 4
;   LENGTH: 858
;   TYPE: PRT
;   ORGANISM: Rattus sp.
US-10-725-488-4
```

```

Query Match          92.6%;   Score 4208;   DB 6;   Length 858;
Best Local Similarity 92.8%;   Pred. No. 0;
Matches 796;   Conservative 19;   Mismatches 43;   Indels 0;
Gaps 0;

```

Qy 1
MPALAIMGLSLAAFLLELGMGASLCLSQQFKAQGDIYLGGLFPPLGSTEEATLNQRTQPNSI 60
| ||| : ||||| : ||||| : ||||| : ||||| : ||||| : ||||| : ||||| : ||||| : ||||| : ||||| :
Db 1
MPGLAILGLSLAAFLLELGMGSSLCLSQQFKAQGDIYLGGLFPPLGTTEEATLNQRTQPNGI 60

Qy 61
LCNRFSPGLGFLAMAMKMAVEEINNGSALLPGLRLGYDLFDTCSEPVVTMKSSLMFLAKV 120
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| : |||
Db 61
LCTRFSPGLGFLAMAMKMAVEEINNGSALLPGLRLGYDLFDTCSEPVVTMKPSLMFMAKV 120

Qy 121
GSQSIAAYCNYTQYQPRVLAVIGPHSSELALITGKFFSFFLMPQVSYASMDRLSDRETF 180

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db 121
GSQSIAAYCNYTQYQPRVLAVIGPHSSELALITGKFFSFFLMPQVSYASMDRLSDRETF 180

Qy 181
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|||||:|||||
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PSFFRTVPSPDRVQLQAVVTLNQNFSWNWVAALGSDDDYGREGLSIFSLANSRGICIAHE 240

Qy 241
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Db 241
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Qy 301
ESWLTS~~DL~~VMTLPNIARVGTVLGFLQRGALLPEFSHYVETHLALAADPAFCASLNAELDL 360
|||||
Db 301
ESWLTS~~DL~~VMTLPNIARVGTVLGFLQRGALLPEFSHYVETRLALAADPTFCASLKAELDL 360

Qy 361
EEHVMGQRCPQCDDIMLQNLSSGLLQNL SAGQLHHQIFATYAAVYSVAQALHNTLQCNVS 420

| | | | | : | | | | |

Db 841 EASDGNSSGSSEATRGEHSE 858

Alignment between Zoller mT1R3 and SEQ ID NO: 23

```
; SEQ ID NO 4
;   LENGTH: 858
;   TYPE: PRT
;   ORGANISM: Rattus sp.
US-10-725-037-4
```

Query Match 93.0%; Score 4221; DB 6; Length 858;
Best Local Similarity 92.9%; Pred. No. 0;
Matches 797; Conservative 21; Mismatches 40; Indels 0;
Gaps 0;

Qy 1
MPALAIMGLSLAAFLLELGMGASLCLSQQFKAQGDIYLGGLFPPLGSTEEATLNQRTPNSI 60
| | : ||||| : ||||||| : |||||||
Db 1
MPGLAILGLSLAAFLLELGMGSSLCLSQQFKAQGDIYLGGLFPPLGTTEEATLNQRTPNGI 60

Qy 61
PCNRFSPGLGFLAMAMKMAVEEINNGSALLPGLRLGYDLFDTCTSEPVVMTMKSSLMFLAKV 120
| | | | | | | | | | | | | | | | | | | | | | | | | | | | : | |
Db 61
LCTRFSPGLGFLAMAMKMAVEEINNGSALLPGLRLGYDLFDTCTSEPVVMTKPSPMLMFAKV 120

Qy 121
GSQSIAAYCNYTQYQPRVLAVIGPHSSELALITGKFFSFLLMPQVSYASMDRLSDRETF 180
|||||
Db 121
GSQSIAAYCNYTQYQPRVLAVIGPHSSELALITGKFFSFLLMPQVSYASMDRLSDRETF 180

Qy 181
PSFFRTVPSPDRVQLQAVVTLLQNFSSWNWVAALGSDDDYGREGLSIFSSLANARGICIAHE 240
|||||:|||||
Db 181
PSFFRTVPSPDRVQLQAVVTLLQNFSSWNWVAALGSDDDYGREGLSIFSGLANSRGICIAHE 240

Qy 241
GLVPOHDTSGQQLGKVLDVLRQVNQSKVQVVVLFASARAVYSLFSYSIIHHGLSPKVWVAS 300
||||| : |||||
Db 241
GLVPOHDTSGQQLGKVVDVLRQVNQSKVQVVVLFASARAVYSLFSYSILHDLSPKVWVAS 300

Qy 301
ESWLTSIDLVMTLPNIRVGTVLGFLQRGALLPEFSHYVETHLALAADPAFCASLNAELDL 360
|||||
Db 301
ESWLTSIDLVMTLPNIRVGTVLGFLQRGALLPEFSHYVETRLALAADPTFCASLKAELDL 360
|||||

Qy 361
EEHVMGQRCPRCDDIMLQNLSSGLLQNL~~SAGQLHHQIFATYAAVYSVAQALHNTLQCNVS~~ 420
||| : ||| : |||

Db 841 EASDGNSSGSSEATRGEHSE 858

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Conclusion

No claims are allowable.

THIS ACTION IS MADE FINAL, see MPEP 803.02. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX months.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Brannock, Ph.D., whose telephone number is (571) 272-0869. The examiner can normally be reached on Mondays through Fridays from 10:00 a.m. to 4:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Andres, Ph.D., can be reached at (571) 272-0867. Official papers filed by fax should be directed to 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

MB



11/02/2006



JANET L. ANDRES
SUPERVISORY PATENT EXAMINER